

Application Serial No.: 09/733,788
Attorney Docket No.: 0190143

List of Claims:

Claim 1 (Currently Amended): A color imaging system comprising:

a color imager having a plurality of photocells producing electrical responses that correspond to chromatic intensity values, and the electrical responses from the plurality of photocells together comprising a captured color image; and

an image processor that white-balances the captured color image to generate a white-balanced color image by multiplying each red, green or blue photocell value by one of red, green or blue white-balance coefficients, respectively, and without interpolating each red, green or blue photocell value with values from other photocells, wherein the image processor ~~and~~ determines whether the white-balanced color captured image is substantially achromatic gray-scale, and if so, ~~renders~~ the image processor converts each of the ~~electrical responses~~ chromatic intensity values to a gray-scale as an achromatic luminance value.

Claims 2-4 (Cancelled)

Claim 5 (Currently Amended): The color imaging system of claim 1, wherein the image processor is further configured to determine whether the white-balanced color image is substantially achromatic image is a black-and-white image, and the achromatic

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~~format is, and if so, renders~~ the image processor converts each of the chromatic intensity values as a black-and-white format luminance value.

Claim 6 (Original): The color imaging system of claim 1, wherein the color image capture device is a scanner having a constant, known light source.

Claim 7 (Original): The color imaging system of claim 1, wherein the color image capture device and image processing circuitry are disposed within a single device.

Claim 8 (Original): The color imaging system of claim 1, further comprising a switch that allows a user to select from among a plurality of white-balance settings.

Claim 9 (Currently Amended): The color imaging system of claim 1, further comprising an image-type specification control that allows a user to select from among a plurality of image formats that determines how the ~~achromatic image processor is rendered~~ converts the white-balanced color image.

Claims 10-15 (Cancelled)

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Claim 16 (Currently Amended): A method of processing an a color image that is captured by a plurality of photocells producing electrical responses that correspond to as a plurality of chromatic intensity values, the method comprising:

white-balancing the plurality of chromatic intensity values to generate a white-balanced color image by multiplying each red, green or blue photocell value by one of red, green or blue white-balance coefficients, respectively, and without interpolating each red, green or blue photocell value with values from other photocells;

determining whether the plurality of chromatic intensity values comprises white-balanced color image is a substantially achromatic gray-scale image; and

converting the plurality of chromatic luminance intensity values to a plurality of achromatic gray-scale luminance values if the plurality of chromatic luminance intensity values are determined to comprise be a substantially achromatic gray-scale image.

Claim 17 (Cancelled)

Claim 18 (Currently Amended): The method of claim 16, further comprising detecting whether the image is a substantially black-and-white image, and if the image is detected to be a substantially black-and-white image, converting the plurality of chromatic luminance intensity values to a plurality of black and white values.

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Claim 19 (Currently Amended): The method of claim 16, further comprising the steps of computing mean and standard deviation values of a color saturation distribution of the image, and comparing the mean and standard deviation values to a plurality of threshold values to detect whether the image is substantially ~~achromatic~~ gray-scale.

Claim 20 (Currently Amended): The method of claim ~~16~~ 18, further comprising the steps of computing mean and standard deviation values of a luminance distribution of the image and comparing the mean and standard deviation values to a plurality of threshold values to detect whether the image is a substantially black and white image.

Claims 21-23 (Cancelled)